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Columbia, SC 29201-1708

MEMORANDUM

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SUBJ Evaluation of the status of **Phibro-Tech, Inc** under the RCRA Info Corrective Action Environmental Indicator Event Code CA725
EPA I D Number **SCD 070 371 885**

FROM Bill Corder, Environmental Engineering Associate BC
Operations Engineering Section
Division of Waste Management
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THRU Michelle D Sherritt, Manager MDS
Operations Engineering Section
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John T. Litton, P E , Director
Division of Waste Management
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TO Phibro-Tech, Inc Project File
EPA ID # SCD 070 371 885
Central File Room # 051669

DATE September 7, 2001

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the status of Phibro-Tech Inc , located in Sumter, South Carolina, in relation to the *Current Human Exposures Under Control* (CA725) corrective action event code defined in the Resource Conservation and Recovery Act Information System (RCRA Info) An evaluation of Phibro-Tech's status in relation to the *Migration of Contaminated Groundwater Under Control* (CA750) corrective action event code will be finalized under separate cover.

Concurrence by the Operations Engineering Section Manager and the Division of Waste Management Director is required prior to entering this event code into RCRA Info Your concurrence with the interpretation provided in the following paragraphs and the subsequent recommendation is satisfied by dating and signing at the appropriate location within Attachment 1

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This is the third evaluation for Phibro-Tech with regard to the CA725 corrective action event code The first evaluation of Phibro-Tech's's status with regard to both the CA725 and CA750 corrective action event codes was completed July 22, 1998 Based on the information available at the time of the first

determination a status code of "NO" – "facility does not meet definition" was entered for CA725 and a status code of "NO" – "facility does not meet definition" was entered for CA750 A second evaluation, dated June 30, 2000, arose from a concern with indoor air quality in the "M[illegible]" Building due to the presence of a groundwater contamination plume underneath the building It was determined in a letter sent to the facility dated September 5, 2000, that there were no indoor air quality concerns at this building

III. FACILITY SUMMARY

Phibro-Tech, Inc manufactures inorganic chemicals from raw materials and spent etchants received from offsite facilities As of August 1995, the production of copper based salts made up approximately 94% of the facility's total production and 100% of the hazardous waste recycling activities on site Other products include nickel and cobalt salts and oxides, patented and proprietary alkaline etchants, metal sulfates (such as copper and nickel sulfate) and metal nitrates Phibro-Tech, Inc. was reissued a RCRA Hazardous Waste Permit in September 2000 for the storage of hazardous wastes in containers and tanks, and for post closure care of three former surface impoundments

Prior to February 1986, process wastewaters were treated in three surface impoundments located in the northeastern corner of the property Sludge from all three impoundments failed toxicity testing for cadmium and, consequently, were closed pursuant to RCRA Currently, process wastewater is pretreated on site in an above ground treatment system, then discharged to the local publically owned treatment works The following solid waste management units and areas of concern, which have been investigated pursuant to Phibro-Tech's HSWA commitments, are also located in this general area of the site the Ferrous Sulfate Burial Area (SWMU 29), The Old Lagoon Sludge Burial Site (SWMU 15), the Former Burial Area 'B' (SWMU 34), and the Debris Piles The remainder of the solid waste managment units/areas of concern investigated are located in, or in close proximity to, the process area of the site

Prior to 1976, Exide Battery owned and operated the facility and from 1966 to 1973 produced nickel flake, nickel sulphamate, and nickel sulphate After the discovery in 1973 of a groundwater contaminant plume underlying the process area of the site, characterized by elevated concentrations of cadmium and nickel, Exide Battery modified plant operations to produce zinc chloride solutions and sodium hydroxide

IV. CONCLUSION FOR CA725

Name and I.D. No.	Location (City or Town)	Date of Latest EI Memo	CA 725 Decision
Phibro-Tech, Inc SCD 070 371 885	Sumter, SC	September 5, 2001	"YE"

V. SUMMARY OF FOLLOW-UP ACTIONS

The *Current Human Exposure Under Control* EI determination will be updated as necessary upon the discovery of new or contrary information

Attachment 1 CA725 Current Human Exposures Under Control

cc Channing Bennett, U S EPA Region IV
Mair DePratter, Division of Hydrogeology
Chris McCluskey, Wateree District EQC

CURRENT HUMAN EXPOSURES UNDER CONTROL
Environmental Indicator (EI) RCRIS Event Code (CA725)

Attachment 1
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRA Info Code (CA725)
Current Human Exposures Under Control

Facility Name	Phibro-Tech, Inc
Facility Address	2395 Cams Mill Road, Sumter, SC 29154
Facility EPA ID #	SCD 070 371 885

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e g , from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

__✓_ If yes - check here and continue with #2 below,

____ If no - re-evaluate existing data, or

____ If data are not available skip to #6 and enter "IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e g , reports received and approved, etc) to track changes in the quality of the environment The two EI developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater An EI for non-human (ecological) receptors is intended to be developed in the future

Definition of 'Current Human Exposures Under Control' EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i e , site-wide))

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA) The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i e , potential future human exposure scenarios, future land and groundwater uses, and ecological receptors)

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRA Info national database ONLY as long as they remain true (i e , RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information)

CURRENT HUMAN EXPOSURES UNDER CONTROL
Environmental Indicator (EI) RCRIS Event Code (CA725)

2 Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	✓			Trichloroethene, cadmium, chromium, copper, lead, nickel, zinc above appropriate MCLs, Region IX Tap Water PRGs
Air (indoors)[2]		✓		A known trichloroethene plume is located beneath the "Meaker" Building, but has been shown to have no impact to indoor air
Surface Soil (e.g., <2 ft)	✓			Releases from SWMUs / metals, VOCs
Surface Water		✓		No, current plume definition data indicate that the groundwater contaminant plume has not reached surface discharge (Nasty Branch Creek)
Sediment		✓		No, current plume definition data indicate that the groundwater contaminant plume has not reached surface discharge (Nasty Branch Creek)
Subsurface Soil (e.g. >2 ft)	✓			Releases from SWMUs / metals, VOCs
Air (outdoors)		✓		No evidence of impact

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded

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1 'Contamination' and 'contaminated' describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based 'levels' (for the media, that identify risks within the acceptable risk range)

2 Recent evidence (from the Colorado Dept of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks

_✓___ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation

_____ If unknown (for any media) - skip to #6 and enter "IN" status code

Rationale and Reference(s)

1) RCRA Facility Investigation Phase 2 dated June 28, 2000
2) August 29, 2001 letter from Phibro-Tech
3) September 5, 2000 letter sent from the Department
4) March 22,2001 letter sent to the Department
5) RCRA Facility Investigation Phase 1 Interim Report dated June 11, 1997

CURRENT HUMAN EXPOSURES UNDER CONTROL
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WORKSheet to analyze major pathways
CURRENT HUMAN EXPOSURES UNDER CONTROL
Environmental Indicator (EI) RCRIS Event Code (CA725)

3 Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table
Potential Human Receptors (Under Current Conditions)

'Contaminated' Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No	No	No	No
Soil (surface, e g , <2 ft)	No	No*	No	No*	No**	No	No
Soil (subsurface, e g , >2 ft)	No	No*	No	No*	No**	No	No

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2 Recent evidence (from the Colorado Dept of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile

contaminants) does not present unacceptable risks

3 Indirect Pathway/Receptor (e g , vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc)

Instructions for Summary Exposure Pathway Evaluation Table

1 For Media which are not "contaminated" as identified in #2, please strike-out specific Media, including Human Receptors' spaces, or enter "N/C" for not contaminated

2 Enter 'yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway)

Note In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have assigned spaces in the above table While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary

__✓_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e g use optional Pathway Evaluation)

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation

_____ If unknown (for any 'Contaminated' Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s)

* Worker / contractor training Also for the most part the Process Area SWMUs are covered by concrete

** Fences / natural barriers prevent access to site Debris Piles are roped and/or there are signs Also security guards patrol the Debris Piles.

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4 Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant"[4] (i.e , potentially 'unacceptable' because exposures can be reasonably expected to be 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"), or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i e , potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to 'contamination' (identified in #3) are not expected to be "significant "

_____ If yes (exposures could be reasonably expected to be "significant" (i e , potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

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5 Can the 'significant' exposures (identified in #4) be shown to be within acceptable limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all 'significant' exposures to "contamination" are within acceptable limits (e g , a site-specific Human Health Risk Assessment)

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable"exposure

_____ If unknown (for any potentially "unacceptable' exposure) - continue and enter "IN"'status code

1 If there is any question on whether the identified exposures are "significant" (i e , potentially "unacceptable" consult a human health Risk Assessment specialist with appropriate education, training and experience

CURRENT HUMAN EXPOSURES UNDER CONTROL
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6 Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility)

__✓_ YE - Yes, 'Current Human Exposures Under Control' has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Phibro-Tech, Inc. facility, EPA ID #SCD 070 371 885, located in Sumter County under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility

_____ NO - "Current Human Exposures" are NOT "Under Control "

_____ IN - More information is needed to make a determination.

Completed by Wilber M. Corder Date 9/7/01

Wilber M Corder Jr, Environmental Engineering Associate
Operations Engineering Section
Bureau of Land and Waste Management

Supervisor Michelle D Sherritt Date 9-7-01 [5]

Michelle D Sherritt, Manager
Operations Engineering Section
Bureau of Land and Waste Management

Locations where References may be found

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Bureau of Land and Waste Management
8901 Farrow Rd, Suite 109
Columbia, SC 29203

USEPA Region 4
RCRA Programs Branch
Waste Management Division
61 Forsyth Street
Atlanta, GA 30303

Contact telephone and e-mail numbers

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[1] **FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**